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No. 8



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# ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXXI.

OCTOBER, 1920.

No. 8.

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## Description of a New Species of the Asilid genus *Pogosoma* (Diptera).

BY E. T. CRESSON, JR., Philadelphia, Pa.

The species of this genus are always interesting. They seem to be distributed in most of the world faunas. Kertész, in his *Catalogus Dipteriorum*, lists eleven species: Four from Europe, four from the East Indies, two from North America, and one from Mexico. In working over the collection here, in connection with some material collected by F. M. Jones in the western states, this genus was brought to my attention by a female from California. On comparing this specimen with another female without data, a male from Colorado, and another male from New Jersey, I found many disagreements in characters which seem worth while consider-

ing. Through the kindness of Prof. J. G. Sanders and Mr. A. B. Champlain of the Bureau of Plant Industry, Harrisburg, Pennsylvania, I am enabled to examine their collection in this genus, consisting of two males and one female from Pennsylvania and Virginia, and two males from Colorado. Of the above material from the Bureau of Plant Industry, Mr. Champlain writes: "I wish to call your attention to the fact that all were collected from Pine. Knull took the Virginia specimens from pine; I got the Colorado specimen flying around cut and infested pine logs, and Sanders collected the Pennsylvania specimens flying around cut white pine, the latter being attacked by *Monohammus*, *Ips*, and other pine insects. It is probably a predator on pine insects in both adults and larval stages."

Critical examination of the above material, supported my earlier supposition that there were two distinct species represented respectively by the eastern and western specimens. They are all typically *Pogosomae* and possess the following characters in common which may be considered of generic or subgeneric importance:

Shining, sparingly pilose species. Head twice as broad as high, deeply excavated between the eyes above; ocelli on a prominent, conical tubercle; antennae inserted near ocellar tubercle, far above center line of eyes. Facial profile produced in form of an obtuse cone to opposite the end of first antennal joint, but leaving a space below antennae straight and nearly vertical. First antennal joint twice as long as second; third as long as first and second together. Proboscis straight, conical, pilose at apex above. Scutellum without true macrochaetae. Abdomen elongate; segments somewhat constricted at incisures. Femora thickened beyond middle; fore tibiae without spur. First submarginal cell divided by a cross vein from anterior branch of third vein; first posterior cell narrowed or closed at margin; posterior cross vein and apical cross vein of fourth posterior cell parallel but not continuous.

*Genotype*.—*Asilus maroccana* Fabricius, 1794, [Original designation].

The two species credited to North America are *Laphria dorsata* Say (1824) and *Laphria melanoptera* Wiedemann (1828). The former is cited as "taken near Philadelphia"; the latter as "Vaterland?" but credited by all students to North America. Williston notes what he considers Wiedemann's species from Florida, and states that it differs from *dorsata* in having the wings black and broader, the face being clothed with black, and the dorsum being shining. I cannot distinguish *melanoptera* from *dorsata* either by descriptions or notes relative to these supposed species. The former is probably a very dark form of the latter, and as the material before me shows much variation in the wing color, I do not think that Wiedemann's name can be retained for any North American species or variety.

**Pogosoma dorsata** Say.

1824. *Laphria dorsata* Say, Amer. Ent., i, pl. vi, page 5.

♀ 1828. *Laphria melanoptera* Wiedemann, Ausser. Zweifl. Ins., i, 514.

Say's description agrees so well with my eastern material that I do not doubt the determination. As there is very much variation in the color of the wings, this character cannot be taken seriously. What I consider *dorsata* may be described as follows:

♂. Black entirely, except more or less brown on post alar calli and on the pleural and ventral sutures. Shining to polished, with some bluish metallic or grayish reflections. Face especially below, occiput especially post orbits, one or two pairs of spots on mesonotum (one at each dorsal end of the two sutures, the anterior pair being most pronounced), suture above base of wings, pleura especially towards pectus, silvery according to the angle of vision. All true bristles black. Pile or bristle-like hairs black as follows: on first and second joints, face above and upper part of mystax, occiput above, palpi, apex of proboscis, prothoracic collar, humeri, mesonotum posteriorly, sometimes a few on margin of scutellum, pleura, and abdomen. Pale (white) pile on frons, around base of antennae, lower part of mystax, lower occiput, proboscis below, mesonotum anteriorly, disc of scutellum and all coxae. Pile long and mixed on legs, but paler on femora becoming black on tarsi. The pile is long and abundant on the lower surfaces of head and legs; long and woolly and rather sparse on scutellum. Wings very variable, from evenly subhyaline, grayish to densely fuscous with lighter areas in the cells especially along the inferior margin.

There are only two bristles in the supra-alar region, one each side of the sutural depression; two or three on the post-alar callus; one, strong, on post margin of mesopleura. Hypopygium complicated; claspers with numerous long bristles along the sublateral margin; between the bases of claspers is a broad appendage with a rounded, laterally directed, tooth-like projection.

♀. Similar. Wings generally darker, more blackish. Pile mostly black; that on cheeks, base of proboscis, and on scutellum generally, remaining pale; it is also less abundant especially on the legs. Length—18 mm.

I have examined the following material: 1 ♂, Browns Mills, New Jersey, June 15, (H. Skinner), [A.N.S.P.]. 2 ♂, East Falls Church, Virginia, July 1-8, (J. N. Knull), [Penna. Dept. Agric.]. 1 ♀, Drumgold, Pennsylvania, July 16, (J. G. Sanders), [Penna. Dept. Agric.]. 1 ♀, without data, [A.N.S.P.].

**Pogonosoma ridingsi** new species.

♂. Similar to *dorsata* but more robust. Mesonotum and scutellum not shining but subopaque. Color of bristles and pile similar except on the face where they are pale (yellowish not white) with several long black bristles on the prominence medianly; of the scutellum and postcoxae, black. The facial pile is more abundant than in *dorsata*, and along the alar margin of the mesonotum and on the postalar calli there are numerous black bristles, while the scutellum has some erect bristle-like hairs of the disc. The vestiture of the pleurae is more abundant than in *dorsata* and the pile on the fore legs is very dense, noticeably more so than on the middle and hind legs. The wings, although probably they will show much variation, seem to be fairly constant in having the fuscous clouding confined to the veins, even those near the costal margin (none of the specimens showing the density of *dorsata*). The hypopygium more robust, similar in general form; but the appendage between the bases of the claspers is tooth-like, not developed laterally into tooth-like lobes. The bristles of the claspers are stronger and fewer in number.

♀. Similar, but as in *dorsata* the pile is mostly black, being pale (brownish) on the cheeks only. The wings as in the male. Length 20 mm.

*Type*.—♂. Colorado, (J. H. Ridings?), [A.N.S.P. No. 6343]. *Paratypes*.—1 ♂; Florissant, Colorado, June 24, 1914, 82 (A. Champlain), [Pa. Dept. Agr.]. 1 ♂; El Paso County, Colorado, August 5, 1911, (A. Champlain), [Pa. Dept. Agr.]. 1 ♀; Keddie, Plumas County, California, July 4, 1918, (F. M. Jones), [A. N. S. P.].

The subopacity of the mesonotum, abundance of bristles along the alar margin, the more abundant and pale facial pile, the more abundant pleural pile, the hypogygial tooth, as well as the more robust habitus and its western distribution, are characters of seeming specific importance.

## Undescribed Crane-flies from Argentina (Tipulidae, Diptera)

BY CHARLES P. ALEXANDER, Urbana, Illinois.

The species of crane-flies described below were sent to me for naming by Señor Charles Bruch and Señor Pedro Jorgensen-Hansen. Some of the species were taken in the "Puna" or highlands of the Province of Jujuy by Vladimir Weiser, a civil engineer engaged in surveying this country, and kindly included in the material sent me by Señor Bruch. The types of *Tipula moniliferoides* were taken at the Estancia of Mr. B. M. Barrett, at Monte Veloz, about 150 kilometers south of Buenos Aires, where most of them were found in the houses in the morning, presumably having been attracted to lights earlier in the evening. The types are preserved in the writer's collection, paratypes of some of the species in the La Plata Museum. I am greatly indebted to the gentlemen above mentioned for the interesting material described at this time and elsewhere.

### *Gonomyia* (*Gonomyella*) *weiseri* new species.

General coloration gray; antennae black throughout; mesonotal praescutum with three brown stripes; pleura grayish with a conspicuous yellow ventral stripe; halteres elongate, pale, the knobs brown; wings subhyaline, the stigma brown; *Sc* elongate; male hypopygium with the largest pleural appendage bifid.

♂ Length about 5.5 mm.; wing 7.2-8 mm. ♀ Length 6.8 mm.; wing 8-8.2 mm.

Rostrum and palpi black. Antennae black, the flagellar segments cylindrical. Head light gray.

Pronotum dull gray, the lateral margins narrowly yellowish, broadest on the scutellum. Mesonotal praescutum light gray with three conspicuous brown stripes; pseudosutural foveae conspicuous, oval, jet black; tuberculate pits at the extreme cephalic margin of the sclerite, separated

from one another by a distance a little greater than the diameter of one; scutum gray, each lobe with a brown mark continued backward from the lateral praescutal stripes; scutellum gray, broadly margined with pale; postnotum light gray. Pleura grayish, a conspicuous yellowish longitudinal stripe across the dorsal portion of the mesosternum and the ventral portions of the mesepimeron, beginning as a narrow point behind the fore coxa, broadest above and immediately behind the middle coxa. Halteres long and slender, pale, the knobs dark brown.

Legs with the coxae dark grayish brown; trochanters brown; remainder of the legs brown, the tips of the femora, tibiae and tarsi darker.

Wings comparatively long and narrow, subhyaline, the stigma conspicuous, oval, brown; veins dark brown. Venation: *Sc* long, *Sc1* ending just before midlength of the long *Rs*; *Sc2* removed a short distance from the tip of *Sc1*, *Sc1* alone being about equal to the basal deflection of *Cu1*; *Rs* very long, almost straight, longer than the combined *R2+3* and *R3* beyond it; *r* on *R2+3* nearer the fork of *Rs* than to the fork of *R2+3*; *R2* approximately equal to *R2+3*; cell *1st M2* open by the atrophy of the outer deflection of *M3*; basal deflection of *Cu1* a short distance before the fork of *M*.

Abdomen dark brown, sparsely pruinose, the caudal margins of the segments narrowly pale. Male hypopygium with the pleurites stout, the appendages inserted near midlength of the inner face; three pleural appendages, the largest heavily chitinized, bifid, the outer arm again slightly split at the tip so that the entire appendage appears indistinctly trifid; inner pleural appendage a flattened blade that is slightly dilated distally and provided with rather numerous sense setae; outer pleural appendage about as long as the second appendage, heavily chitinized, sinuous, narrowed to the blunt apex. Penis-guard long and narrow, the apex indistinctly trifid. Ovipositor with the valves slender, acute, strongly upcurved.

*Habitat*: Argentina.

*Holotype*: ♂; Cueva Iturbe, Province of Jujuy, altitude 3700 meters, November 10, 1919 (Vladimir Weiser). *Allotype*: ♀, Hornadita, Province of Jujuy, altitude 3400 meters, November 30, 1919 (Weiser). *Paratypes*: 1 ♀, with the allotype; 7 ♂ 4 ♀, Tilcara, March 20, 1920.

This interesting fly is dedicated to its collector, Señor Vladimir Weiser, to whom we are indebted for considerable assistance in determining the range of distribution of Tipulidae in Argentina.

***Gonomyia* (*Gonomyella*) *argentinensis* new species.**

General coloration light brownish gray; antennae dark brown, mesonotal praescutum with three brown stripes; pleura dark brown with a



conspicuous light yellow longitudinal stripe; wings with a faint brownish tinge, the stigma very faint; male hypopygium with the intermediate pleural appendage narrow basally, gradually widened, the acute outer angles subequal.

♂. Length about 5 mm.; wing 5.5 mm.

Rostrum and palpi dark brown. Antennae dark brown. Head light gray, with an indistinct, darker, median line.

Pronotum dark brown, the lateral margins narrowly pale yellow. Mesonotal praescutum light brownish gray, with three dark brown stripes; scutum brownish gray, each lobe with two brown spots; scutellum and postnotum dusted with gray. Pleura dark brown; a conspicuous light yellow longitudinal stripe across the dorsal portions of the mesosternum, extending from behind the fore coxae to dorsad of the hind coxae; cephalic portion of the mesepimeron yellow; dorsal pleurites dusted with gray. Halteres light yellow, the knobs brown.

Legs with the coxae reddish brown; trochanters dull yellow; remainder of the legs obscure yellow; the tarsi darker.

Wings with a faint brown tinge; stigma very faint, slightly darker brown; veins dark brown. Venation: *Sc*<sub>2</sub> some distance from the tip of *Sc*<sub>1</sub>, immediately beyond the origin of *Rs*; *Rs* but slightly arcuated, about as long as *R*<sub>2</sub>+*3* and *R*<sub>2</sub> taken together; *r* indistinct, inserted at about midlength of *R*<sub>2</sub>+*3*; cell *1st M*<sub>2</sub> open; basal deflection of *Cu*<sub>1</sub> before the fork of *M*, this distance being about one-half the deflection.

Abdomen dark brown, the posterior margins of the segments indistinctly paler. Male hypopygium with the pleurites having three appendages, the outermost flattened, the short apex produced into an acute point that is directed at a right angle to the remainder of the blade, somewhat like the beak of a bird; the intermediate appendage is slender basally, gradually dilated into a fanlike structure, the outer margin concave, the lateral angles thus formed produced into acute or subacute, subequal points; inner pleural appendage a pale, flattened lobe that is gradually widened to just before the apex, the tip obtuse. Penis-guard distinctly trifid at apex.

*Habitat*: Argentina.

*Holotype*, ♂, Rioja, February, 1915, (E. Giacomelli).

*Allotopotype*, 1 ♀, in poor condition.

This fly is allied to *G. velutina* Alexander, *G. weiseri* new species, and other members of the subgenus in the Neotropical fauna but is readily told by the structure of the male hypopygium.

***Gonomyia (Leiponeura) bruchi*** new species.

Antennae black, the scapal segments largely yellow; head yellow, the vertex with a brown blotch; thorax yellow, marked with brown; thoracic

pleura yellow with two brown longitudinal stripes; halteres brown, the knobs yellow; legs brown; wings yellowish gray, the stigma indistinct; male hypopygium with the outer pleural appendage a chitinized hook with a short horn near its base.

♂. Length about 4 mm.; wing 3.8 mm.

Rostrum brown; palpi dark brown. Antennae of the male provided with very long verticils as usual in this group of species; first scapal segment yellow; second scapal segment enlarged, dark brown, margined with yellow; remainder of the antenna dark brown. Head light yellow with a large brown blotch on the vertex.

Pronotum whitish yellow. Mesonotal praescutum with three dark brown stripes that are sparsely purplish gray pruinose, entirely confluent in front, separated behind to show the yellow ground-color; lateral margins of the praescutum broadly yellow; scutum yellow, the center of each lobe purplish brown, this color produced by the backward extension of the lateral praescutal stripes; scutellum yellow, with a conspicuous brown median blotch at the base; postnotum brownish. Pleura yellow with two conspicuous brown longitudinal stripes, the more ventral suffusing the sterno-pleurites; mid-line of the sternum yellow. Halteres pale brown, the base of the stem and the base of the knobs darker; remainder of the knobs conspicuously light yellow.

Legs with the coxae and trochanters pale; remainder of the legs pale brown, the distal tarsal segments darker.

Wings with a strong yellowish gray tinge; stigma barely indicated by a long, dusky suffusion in cell *R1*; veins pale. Venation: *Sc* rather short, *Sc1* ending a short distance before the origin of *Rs*; *Sc2* removed from the tip of *Sc1* to a distance that is but little shorter than  $r-m$ ; *Rs* rather short, almost square at origin; cell *1st M2* broad, the basal deflection of *Cu1* at or immediately before its fork.

Abdominal tergites dull yellow, with a broad, brownish median stripe; sternites yellow. Male hypopygium with the pleurites moderately stout, the outer angle produced into a long, stout, fleshy lobe; outer pleural appendage a long, chitinized hook that is broad at the base, narrowed gradually to the sinuous, acute tip, beyond the base with a short, stout horn; inner pleural appendage very small, fleshy, provided with stout bristles and tipped with a powerful spine. Penis-guard formed as two parallel flattened blades, the tips blackened and produced into a short beak that is directed cephalad; gonapophyses black, bent slightly at their tips which are minutely and irregularly toothed.

*Habitat*: Argentina.

*Holotype*, ♂, Province of Buenos Aires, October 11, 1919, (C. Bruch). 1 ♂, 2 ♀, La Aranja, Alta Gracia, Prov. de Córdoba, April 1-8, 1920 (C. Bruch).

This beautiful little fly is respectfully dedicated to its collector, Señor Charles Bruch, to whom I am greatly indebted for many Argentinian Tipulidae.

**Holorusia catamarcensis** new species.

Antennae naked, the basal half yellow, the distal half passing into brown; mesonotal praescutum brownish buff with three conspicuous gray stripes that are narrowly margined with dark brown, the median stripe bisected by a narrow line of this color; legs yellow, the tips of the femora and tibiae dark brown; wings brownish yellow, the stigma and a spot at the origin of *Rs* darker; abdominal tergites yellow, trivittate with dark brown.

♀.—Length about 19 mm.; wing 20.5 mm.

Frontal prolongation of head brownish yellow, narrowly dark brown laterally; nasus long and slender; palpi dark brown. Antennae with the basal seven segments light yellow, the flagellum thence passing into brown; flagellar segments cylindrical with microscopic verticils only, as in the genus; first flagellar segment very long and slender, nearly as long as the succeeding three taken together. Head pale brownish testaceous, sparsely gray pruinose.

Mesonotal praescutum pale brownish buff with three conspicuous gray stripes that are narrowly margined with dark brown, the median stripe split by a conspicuous brown stripe; scutum pale grayish testaceous, the lobes largely gray; scutellum and postnotum testaceous, sparsely whitish pruinose, the postnotum with a capillary brown line. Pleura pale brown, sparsely pruinose, the dorso-pleural membranes dull yellow. Propleura dull yellow, with an indistinct brownish spot above the fore coxa. Halteres pale, the knobs slightly darker.

Legs with the coxae yellow, sparsely pruinose; trochanters yellow; femora dull yellow, the tips conspicuously dark brown; tibiae similar, the tips narrowly darkened; tarsi pale brown, the distal segments darker.

Wings with a strong brownish yellow tinge, the subcostal cell yellow; stigma oval, brown; a brown cloud at the origin of *Rs*, a brown seam below vein *Cu*; oblitative areas before the stigma in cell *1st R2* and across cell *1st M2*, the basal deflection of *M1+2* and the outer deflection of *M3+4* being largely pale; cell *C* above the stigma pale; anal cells darkened distally, cell *1st A* with a pale triangle at the apex, slightly before vein *2nd A*; veins dark brown. Venation: *Rs* rather long, exceeding *R3*, slightly angulated at origin; vein *R3* not strongly arcuated; cell *1st M2* narrow; petiole of cell *M1* about one-half as long as *m*.

Abdomen yellowish, the tergites trivittate, a narrow brown median stripe, the apical segments with the caudal margins narrowly darkened; sublateral stripes broader; lateral margins pale gray; second sternite with a large brown blotch at the base. Ovipositor with the tergal valves long, straight, compressed.

*Habitat:* Argentina.

*Holotype*, ♀, Esquina Grande, Catamarca, April 7, 1915.  
(P. Jorgensen-Hansen).

***Holorusia jujuyensis* new species.**

General coloration dark brownish black, pruinose; nasus bifid; antennal segments with short bristles; legs dark brown; wings gray, the veins seamed with subhyaline; *Rs* short, petiole of cell *M1* short; abdominal tergites reddish brown with sublateral brownish black stripes.

Length 18 mm.; wing 16 mm.

Frontal prolongation of the head comparatively short, dark reddish brown; nasus broad, distinctly bifid at apex, clothed with long yellow bristles; palpi brownish black. Antennae with the first segment dark brown, sparsely pruinose; second segment brownish yellow; flagellum uniformly brown, the outer segments darker; but ten evident flagellar segments, the first segment a little less than the succeeding two taken together; flagellar segments cylindrical with comparatively short verticils, the first and second flagellar segments with numerous such bristles. Head dark brown, narrowly gray along the inner margin of the eyes.

Mesonotal praescutum grayish brown, with three dull gray stripes that are margined with dark brownish black, the median area of the sclerite discolored in the unique type; humeral regions and lateral margins obscure yellow; scutum blackish with two large gray areas; scutellum and postnotum dull gray with a narrow blackish median line. Pleura dull gray, indistinctly marked with blackish; a conspicuous whitish area on the lateral sclerites of the postnotum, immediately cephalad of the base of the halteres. Halteres dark brown, paler basally.

Legs with the coxae and trochanters dark brown, the former dull gray pruinose, remainder of the legs dark reddish brown, the tips of the femora, tibiae and all the distal tarsal segments black.

Wings broad, dull gray, the veins broadly seamed with subhyaline, isolating the ground-color to the centers of the cells; a nearly continuous subhyaline streak along vein *M*, passing into cell *R* near its end, crossing cell *1st M2* and into cell *M4* where it forks before the wing-margin; similar forks are found in cells *R5*, *M1* and *2nd M2*, leaving gray triangles in the apices of these cells; stigma large, dark brown; cell *R2* pale, centered with gray; cell *R3* gray, the outer end pale; vein *1st A* is bordered on either side by a broad subhyaline space; veins reddish horn-color. Venation: *Rs* short, a little longer than *R2+3*; *R3* rather strongly arcuate; cell *1st M2* comparatively broad; petiole of cell *M1* short, about one-half of *m*; fusion of *Cu1* and *M3+4* punctiform.

Abdominal tergites reddish brown, with conspicuous, sublateral brownish black stripes and narrow gray margins; segments narrowly ringed caudally with pale; sternites brown, the distal segments more blackish. Ovipositor with the tergal valves almost straight, long and slender.

*Habitat:* Argentina.

*Holotype:* ♂, Province of Jujuy, January 12, 1920 (V. Weiser). *Allotype:* ♀, Tilcara, Jujuy, January 12, 1920 (Vladimir Weiser). *Paratopotypes:* 1 ♂, 1 ♀; *paratypes*, 10 ♂, 2 ♀, La Granja, Alta Gracia, Prov. de Córdoba, April 1-8, 1920 (C. Bruch).

***Tipula moniliferoides* new species.**

♂ Length 12-13 mm.; wing 13.6-14.3 mm.; antenna 10.2-11 mm. ♀ Length 18-19 mm.; wing 14.2-15 mm.

Similar to *T. monilifera* Loew, differing as follows:

Antennal flagellum beyond the first segment brownish black. The three thoracic stripes are present, the median stripe represented by broad margins that are a little narrower than the lateral stripes. Pleura uniformly light yellow.

*Habitat:* Argentina.

*Holotype:* ♂, Monte Veloz, Province of Buenos Aires, January 17, 1920 (C. Bruch). *Allotopotype:* ♀. *Paratopotypes:* 2 ♂'s, 5 ♀'s, Estancia B. Barrett, Monte Veloz, January 14-17, 1920 (C. Bruch). *Paratypes:* 4 ♂, 4 ♀, La Granja, Alta Gracia, Prov. de Córdoba, April 1-8, 1920 (C. Bruch).

*Tipula mitua* Alexander (Colombia) which has the antennal flagellum dark colored as in the present species, differs in the relative shortness of the antennae and the coloration of the thorax.

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#### ***Cicindela nevadica* LeConte (Coleop).**

A series of ten specimens of this extremely rare *Cicindela* (six females, four males) was taken by Mr. Morgan Hebard, August 23, 1919, on alkaline flats near the Fairbanks Ranch, Ash Meadows, Nevada, at an elevation of 2300 feet. They were very wary and difficult to capture. There is only one specimen without even a State label in the Horn Collection; the species has evidently not been taken recently as no records are available other than Nevada from where the type was described. It is one of the few species not represented in the collection of Cicindelidae of the late Edward D. Harris. In company with *nevadica* LeC. was taken a series of *Cicindela haemorrhagica* LeC. (subsp.) var. *pacifica* Schaupp.—FRANK R. MASON, Philadelphia, Pa.

## Notes on the Genus *Hetaerius* and Descriptions of three New Species (Coleop.)

BY J. O. MARTIN, Berkeley, California

During the past five years I have spent such time as I have been able to spare during the proper season in collecting the curious ant guests belonging to the genus *Hetaerius*. It is a rather laborious form of collecting as the ant nests in which these beetles are found generally occur under stones, many of which require considerable effort to overturn. Thus far in my experience, I have found them only during the winter months after the ground has been thoroughly wet by the rains. At such times the ants bring their eggs, larvae and pupae, as well as the Aphids they may possess, to the under side of the rocks to absorb the heat gathered by these stones on such days as the sun may be shining. Here too other guests may sometimes be seen and occasionally the desired *Hetaerius*. Once I found six specimens of *Hetaerius zelus* in a single day, often two and more often but one represented the spoils of a strenuous day's work. Far outnumbering these red letter days were those in which the only reward was an aching back and painfully worn finger tips.

As to the habits of these beetles I have been able to learn little, for during the excitement, due to the sudden flood of sunlight the main reaction seems to be toward escape to the underground galleries. Sometimes the *Hetaerius* may be found clinging to the under side of the stone, though more frequently he is jarred off by the over-turning process. He then feigns death as so many of the Histeridae do, but in a short time comes to life and straddles rapidly away on his clumsy appearing legs toward the gallery entrance. Twice I have seen an ant pick up the beetle and start under ground with him, but as a rule the *Hetaerius* makes off under his own power.

During a recent trip to Mill Valley, Marin County, California, I had the good fortune to take two specimens of *Hetaerius* which on examination turned out to be unde-

scribed. Dr. E. C. Van Dyke very kindly turned over to me for study the specimens of this genus in his collection as did Dr. F. E. Blaisdell. Among Dr. Van Dyke's material I found one each of the two species taken by myself at Mill Valley, and three examples of still another species which appears to be undescribed.

Up to the present there have been described thirteen species of the genus *Hetaerius* in the United States and of these seven are from the state of California.\* The three included in the present paper make a total of ten for this state and sixteen for the United States. Beside these there are but five described from the rest of the World.

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- \* *Hetaerius*, Erichson, Klug. Jahrb. Ins. Vol. I. p. 156. (1834).  
*blanchardi* Le Conte, Proc. Am. Phil. Soc., Vol. XVII, p. 609 (1878). Tyngsboro, Massachusetts.  
*brunnipennis* Rand, Bost. Jour., Vol. II, p. 40 (1838). Cambridge, Massachusetts; Pennsylvania; Ohio.  
*carinistrius* Lewis, Ann. Mag. Nat. Hist. Ser. 8, Vol. XII, p. 85 (1913), Hartford, Connecticut.  
*minimus* Fall, Psyche, Vol. XIV, p. 68 (1907). Colorado; New Mexico.  
*hornii* Wickham, Psyche, Vol. VI, p. 322 (1892). Cheyenne, Wyoming.  
*exiguus* Mann, Psyche, Vol. XVIII, p. 108 (1911). Pullman, Washington; Kendrick, Idaho; New Mexico.  
*californicus* Horn, Trans. Am. Ent. Soc., Vol. III, p. 137 (1870). Sonoma and Pasadena, California.  
*morsus* LeConte, Proc. Acad. Nat. Sci. Phil. (1859), p. 70. Fort Tejon, California.  
*tristriatus* Horn, Trans. Am. Ent. Soc., Vol. V, p. 21 (1874). Calaveras County, California; Pullman, Washington.  
*wheeleri* Mann, Psyche, Vol. XVIII, p. 30 (1911). Palo Alto and Berkeley, California.  
*zelus* Fall, Can. Ent., Vol. XLIX, p. 165 (1917). Pasadena and San Francisco, California.  
*strenuus* Fall, Can. Ent., Vol. XLIX, p. 167 (1917). Santa Cruz Mts., Pasadena, California.  
*loripes* Casey, Memoirs on the Coleoptera, Vol. VII, p. 236 (1916). Tulare County, California.  
*Terapus*, Marseul, Ann. Soc. Ent. France, 4th ser. Tome 2nd, p. 682 (1862).  
*mnizechi*, Marseul, ibid. Pasadena, California.  
 Synonym: *Melanetaerius infernalis* Fall, Psyche, Vol. XVI, p. 69 (1907).

In the preparation of this paper I have examined specimens of the following species, *brunnipennis*, Rand; *blanchardi* Le Conte; *californicus* Horn; *tristriatus* Horn; *zelus* Fall; *strenuus* Fall; and *wheeleri* Mann. I have also gone over the original descriptions of the thirteen species, a bibliography of which will be found in the first footnote for the convenience of the future students of the genus.

In studying the vestiture of these beetles it is evident that there are three different types of hairs: first, the ciliated or branched kind; second, flattened or squamose hairs with a border of cilia; and third, ordinary hairs. The California species may be grouped as follows on the basis of hairs found on the upper surface of the body.

Without squamose or branched hairs on thoracic disc or elytral spaces: *californicus*, *nitidus*.

With both squamose and branched hairs on thorax and elytra: *tristriatus*, *hirsutus*, *williamsi*, *morsus?*, *loripes*, *zelus*.

With majority of the hairs squamose ciliate: *strenuus*.

With a few minute fringed hairs on thorax and elytra: *wheeleri*.

The presence or lack of hair and its arrangement on the body seems to possess significant specific value and also the pygidium and flattened surfaces of the legs. As so many of the descriptions are silent on these points, as well as on many others of importance, I shall not attempt to construct a table of species at this time.

#### ***Hetaerius nitidus* sp. nov.**

Form oblong, moderately convex above, rufo-castaneous, smooth, shining.

Head smooth, shining; vertex viewed from above not concave but slightly convex, with three triangularly-placed setigerous punctures near caudal end of the margined area and three seta-bearing punctures in a transverse line at cephalic margin; front slightly rugose and with a vertical row of four to six setigerous punctures on each side of the impunctate middle space; clypeus sparsely, coarsely, and irregularly punctate with six setae bordering the apical margin.

Prothorax twice as broad as long, narrowed apically, lateral margin straight from apical angle to one-third the distance from base, where it becomes suddenly arcuate to basal angle; disc one-third wider than long, smooth, shining and bearing three or four setigerous punctures on apical portion which are not regular in position; the pentangular disc separated



from the slightly rougher lateral areas by a margined sulcus which begins at the basal angle and follows the basal margin for about one-fifth the width of an elytron, then, turning at nearly a right angle, crosses the prothorax diagonally with a slightly sinuate course to its inflexed tip, where it dies out before reaching the apical margin; parallel to this sulcus and on the lateral margin of the disc is a broad shallow groove which at its basal end forms a broad foveate depression, is constricted at its middle, and broadens again at its shallow apical end; lateral area narrowest at base, widening to apex and divided at basal third by a broad foveate depression which is not a distinct groove as in other species of the genus examined by me; apical portion of lateral area has about eight setigerous punctures irregularly placed, the included setae reddish yellow and depressed; the basal portion of this lateral area is moderately tuberculate and has about six setigerous punctures; thoracic lateral margin bordered with six to eight black setae unequally spaced.

Elytra smooth, shining, slightly wider than thorax, about as wide as long, sides slightly arcuate, distinctly rounded posteriorly; first stria from the elytral suture reaching three-fourths of length of elytra, with two setae at basal end, none at tip; second stria nearly reaching apex, two setae at base and five along apical end; third stria not quite reaching apex, with an increasing number of setae from base to tip; subhumeral stria not quite reaching apex, with fairly evenly spaced hairs throughout its length; interspaces and disc smooth, shining; a row of setae on apical margin.

Pygidium and propygidium smooth, shining, moderately, evenly punctured, each puncture bearing a subulate seta.

Prosternum rugose, flattened, margined area on caudal end reaching to one-half its length, margin sinuate between the coxae, beyond arcuately convergent and meeting, completely enclosing the cephalic end of margined area which is smooth and shining.

Legs smooth, shining, sparsely punctured, punctures with setae, hind tibia not much wider than femur.

Meso- and metathoracic segments and abdomen smooth, shining without punctures. Length 1.5 mm.

Described from four examples; *type* in my own collection, from Mill Valley, Marin County, California; *paratypes* in the collection of Dr. E. C. Van Dyke, who kindly loaned them to me for comparison.

My specimen was taken from the nest of a small grey ant while those of Dr. Van Dyke came from the nest of a much larger species.

(To be Continued)

# ENTOMOLOGICAL NEWS

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PHILADELPHIA, PA., OCTOBER, 1920.

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## Shall the Subscription Price of the News Be Increased?

Since January, 1910, the subscription price of ENTOMOLOGICAL NEWS has been Two Dollars. In 1910, and for a number of years following, each monthly issue comprised 48 pages, and often one or more plates. The higher prices for everything, due to the war, gradually compelled us to drop to 30 pages per month and to discard illustrations, except where these were paid for by contributors. As a result, papers accepted for publication are often compelled to wait their turn for months before they see the light.

As a remedy for this condition it has been suggested that by raising the subscription price to \$2.50 per year we may be able to increase the number of pages and perhaps furnish some illustrations and that a vote be taken of our subscribers to indicate their willingness or unwillingness to subscribe to the News at the higher figure.

At the back of this number there will be found a blank form to be torn out, filled in and mailed to us. We hope that all our subscribers will send us these cards as soon as possible, duly filled in and signed, that we may know their wishes in time to make necessary arrangements for the News for 1921.

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## Notes and News

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE

#### Orthoptera: Tettigidae.

Dr. Joseph L. Hancock has found it impracticable to continue his studies in the Tettigidae. His collections are now being added to the material deposited at the Academy of Natural Sciences of Philadelphia by Mr. Morgan Hebard.

Correspondents or students wishing to have Tettigidae determined or studied will receive as prompt attention as can reasonably be given by writing Mr. Morgan Hebard, Chestnut Hill, Philadelphia, Pa.

### Some Collecting Activities During the Summer of 1920.

Dr. Henry Skinner and Mr. R. A. Leussler, of Omaha, Nebraska, collected at Moab, Utah, and for shorter periods at Park City and Salt Lake City, Utah, and Evanston and Laramie, Wyoming, in July and early August.

Messrs. Morgan Hebard, J. A. G. Rehn and Frank R. Mason collected in the Santa Marta region of Colombia, South America, in July and August.

Mr. Charles Liebeck paid special attention to *Donacia* (Coleoptera) in New Jersey.

### The Cornell University Entomological Expedition to South America of 1919-20.

This expedition (on which a note appeared in the NEWS for May last, pages 139-140) had, on June 17, reached Campamiento Colonia del Pereni, Peru, and had been joined by Mr. Jesse Williamson. Mr. Harris was recovering nicely from paratyphoid fever and about ready to sail for New York. Drs. Bradley and Forbes and Mr. Williamson were actively collecting. (From letters from Mr. Williamson.)

Jesse Williamson arrived home August 24. On June 22 he was taken ill with amoebic dysentery and was confined to his bed ten days. Drs. Bradley and Forbes left the Colony of the Perene on July 3 and he expected to follow as soon as he was able to travel. But on July 5 he was arrested as a Chilean spy and taken back to San Ramon, where he was detained five days. Bradley and Forbes made a seven days' mule ride to Bermudez on the Ucayali River and were to leave there July 17 for Iquitos. After Jess was released, he was still so weak that he decided he could not overtake them, so he returned home by the west coast and Panama. He has entirely recovered.—E. B. WILLIAMSON, Bluffton, Indiana.

### Conference of Economic Entomologists.

An informal conference and field meeting of eastern entomologists was held in The Academy of Natural Sciences of Philadelphia and at the Japanese beetle laboratory at Riverton, New Jersey, on July 29 and 30, 1920. Various introduced injurious insects were discussed, certain recommendations made and the establishment of an Eastern Branch of the American Association of Economic Entomologists recommended. The proceedings of the meeting are given in some detail in the *Journal of Economic Entomology* for August, 1920.

### Reorganization of Division of Entomology at the University of California.

A reorganization of the Division of Entomology at the University of California has been announced, taking effect July 1 of this year. The personnel of the Division consists of eight members and will hereafter be

known as the Division of Entomology and Parasitology, with Professor W. B. Herms as newly appointed Head. Professor Herms will continue his activities in the field of Parasitology, particularly Medical Entomology and Ecology, while Professor C. W. Woodworth will devote his time largely, if not wholly, to research. The new organization of the Division embraces three groups with Assistant Professor E. C. Van Dyke as chairman in supervision of activities in general Entomology and Taxonomy; Assistant Professor Essig, chairman in supervision of Agricultural Entomology, and Assistant Professor S. B. Freeborn supervising activities in Parasitology, particularly in relation to the animal industries. Dr. H. H. Severin will continue investigating *Eutettix tenella* in relation to sugar beet blight, while Messrs. E. R. de Ong and G. A. Coleman will continue their activities in their respective fields, namely University Farm School and Apiculture respectively.

#### The Gypsy Moth in New Jersey and Pennsylvania.

This European insect which has scourged much of New England for the past twenty years has now spread southward. The Newark (New Jersey) *Evening News* of July 27, 1920, published the following: "Staff Correspondence. Trenton, July 27.—Investigation of the outbreak of the gypsy moth on the Duke estate at Somerville by the State Department of Agriculture has revealed the presence of the moth at various other points, including Somerville, Manville, Millstone and Bound Brook. Further scouting, it is believed, will reveal additional infections.

Through the co-operation of A. F. Burgess, federal agent in charge of moth work, trained scouts were sent to the infested area. Thousands of caterpillars were found and complete defoliation had occurred over several acres on the Duke estate planted in blue spruces. It is feared that nursery stock shipped from the Duke estate to points both in and outside New Jersey may have carried the egg masses to various places. A small infection recently discovered at Deal was traced to blue spruce trees originating at the Duke estate. Other shipments from that point are now being traced."

The Philadelphia *Public Ledger* of August 7, 1920, contained a despatch from "Harrisburg Aug. 6—The gypsy moth one of the most destructive pests known in the Atlantic states, has been discovered upon spruce trees recently shipped to the Charles M. Schwab estate near Loretto from the Duke estate at Somerville N. J.

"For some time the moth has been prevalent in parts of New Jersey and the state Department of Agriculture has been conducting a campaign to keep it out of Pennsylvania. Reports of an insect damaging trees at Loretto reached the Capitol a few days ago and Director J. G. Sanders detailed one of the department experts to make an investigation. Word was received by Doctor Sanders today that the moth had been identified."

The same journal on August 27 1920, stated, "Harrisburg, Aug. 26.—

Agents of the Bureau of Plant Industry have found the gypsy moth in only two places in Pennsylvania as the result of an intensive inspection campaign. The moth was discovered first at Loretto and found later near Scranton. Both places were immediately isolated and precautions taken.

"Since then scores of shipments to this state have been traced, including many to the vicinity of Philadelphia, but no signs of the moth have been found."

## Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded.

The numbers in **HEAVY-FACED TYPE** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments. The records of papers containing new genera or species occurring north of Mexico are all grouped at the end of each Order of which they treat.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

**2**—Transactions of The American Entomological Society, Philadelphia.  
**4**—Canadian Entomologist, London, Canada. **6**—Journal of the New York Entomological Society. **8**—The Entomologist's Monthly Magazine, London. **10**—Proceedings of the Entomological Society of Washington, D. C. **11**—Annals and Magazine of Natural History, London.  
**12**—Journal of Economic Entomology, Concord, N. H. **17**—Lepidoptera, Boston, Mass. **19**—Bulletin of the Brooklyn Entomological Society. **20**—Bulletin de la Societe Entomologique de France, Paris. **30**—Tijdschrift voor Entomologie, The Hague, Holland. **49**—Entomologische Mitteilungen, Berlin-Dahlem. **50**—Proceedings of the United States National Museum, Washington. **54**—Proceedings of the Biological Society of Washington, D. C. **57**—Biologisches Zentralblatt, Leipzig. **68**—Science, Lancaster, Pa. **71**—Novitates Zoologicae, Tring, England. **72**—The Annals of Applied Biology, London. **75**—The Anatomical Record, Philadelphia. **76**—Nature, London. **82**—The Ohio Journal of Science, Columbus. **88**—Occasional Papers of The Museum of Zoology, University of Michigan, Ann Arbor. **90**—The American Naturalist, Lancaster, Pa. **93**—Bulletin, Division of the Natural History Survey, Urbana, Illinois. **96**—Physis. Revista de la Sociedad Argentina de Ciencias Naturales, Buenos Aires. **98**—Annals of Tropical Medicine and Parasitology, Liverpool. **102**—Broteria. Revista Lusco Brasileira. Serie Zoologica, Braga. **103**—Biologisches Centralblatt, Leipzig. **106**—Anales de la Sociedad Cientifica Argentina, Buenos Aires.

**GENERAL.** **C. G. H.**—The imperial entomological conference. **76**, cv, 502-4. **Cockerell, T. D. A.** Eocene insects from the Rocky Mountains. **50**, lvii, 233-60. **Craighead, F. C.**—Direct sunlight as a factor in forest insect control. **10**, xxii, 106-8. **Dickerson & Weiss.**—The insects of the evening primrose in New Jersey. **6**, xxviii, 32-74. **Escherich, K.**—Zeitschrift für angewandte Entomologie, vi, Heft 2. **Imms, A. D.**—The training of practical entomologists. **76**, cv, 676-7. **Imms & Husian.**—Field experiments on the chemotropic responses of insects. **72**, **51**, 269-92. **Meyer, P.**—Art oder varietat? Eine auffassungs-und zweckmassigkeitsfrage der systematik, betrachtet vom standpunkt der biologie. . . . **49**, ix, 1-9. **Oberholser, H. C.**—The nomenclature of families and subfamilies in zoology. **68**, lii, 142-7. **Pierantoni, U.** Nuove osservazioni sulla luminosita degli animali. (Rend. Acad. Sci. Fis. e Mathe. Soc. R. Napoli., lvi, 24-7). **Poche, F.**—Zur begründung dreier antrage zwecks einschränkung der zahl der namensänderungen und abschaffung des liberum veto in der Internationalen Nomenklaturkommission. (Arch. f. Naturges., lxxxiii, 75-155, 1917). **Weiss & West.** Fungous insects and their hosts. **54**, xxxiii, 1-20.

**ARACHNIDA** **C. Glendenning, R.** Some notes on the Eriophidae in British Columbia. **4**, lii, 136-7. **Petrunkovitch, A.**—Description of *Orchestina saltitans*. **6**, xxviii, 157-60.

**Chamberlin, R. V.**—Canadian Myriopods collected in 1882-3 by J. B. Terrell, with additional records. **4**, lii, 166-8. A new diplopod from Texas and a new Chilopod from Alaska. **54**, xxxiii, 41-4.

**NEUROPTERA.** **Campion, H.**—Some new or little known Gomphine dragon flies from South American. **11**, v, 130-41. **Chaine, J.** L'attaque des vegetaux par les termites. (Revue Gen. Sci. Pures et Appli, Paris, xxxi, 250-55; 281-85). **Crampton, G. C.**—Some anatomical details of the remarkable winged zorapteron, *Zorotypus hubbardis*, with notes on its relationship. **10**, xxii, 98-106. **Needham, J. G.**—Burrowing mayflies of our larger lakes and streams. (Bull. Bur. Fisheries, xxxvi, 269-92). **Reijne, A.** A cocoospinning thrips. **30**, lxiii, 40-5. **Snyder, T. E.**—The colonizing reproductive adults of termites. **10**, xxii, 109-50. **Williamson, E. B.**—A new gomphine genus from British Guiana, with a note on the classification of the subfamily. **88**, No. 80. **Wilson, C. B.**—Dragonflies and damselflies in relation to pondfish culture, with a list of those found near Fairport, Iowa. (Bul. Bur. Fisheries, Wash., xxxvi, 185-264).

**Caudell, A. N.** Zoraptera not an apterous order. **10**, xxii, 84-97.

**ORTHOPTERA.** **Blatchley, W. S.**—Orthoptera of northeastern America, with especial reference to the faunas of Indiana and Florida. (1920. The Nature Publishing Co., Indianapolis, 784 pp.). **Borelli, A.** Dermatteri nuovi o poco noti del Messico. (Bol. Mus. Zool. Anat. Comp. Univ. Torino, xxx, No. 699). **Borri, C.**—Sopra il numero e la situazione degli stigmi toracici negli Acrididi. (Mon. Zool. Italiano, xxxi, 22-9). **Cho-**

**pard, L.**—Diagnose d'une espece nouvelle du genre *Hygronemobius*. **20**, 1920, 120-2. **Cravero, A.**—Contributo allo studio dell'armatura genitale di alcuni *Dermatteri*. (Boll. Mus. Zool. Anat. Comp. Univ. Torino, xxxiii, No. 730). **Davis, W. T.**—The true katydid nearly extinct in New York City. **6**, xxviii, 78-80. **Morse, A. P.**—Manual of the Orthoptera of New England, including the locusts, grasshoppers, crickets, and their allies. (Proc. Boston Soc. Nat. Hist., xxxv, 197-556.)

**Hebard, M.**—Revisionary studies in the genus *Arenivaga* (Blattidae). **2**, xlvi, 197-217.

**HEMIPTERA. Deletang, L. F.**—Contribucion al estudio de los Cicadidos Argentinos. **106**, lxxxviii, 25-94. **Dozier, H. L.** Notes on the genus *Platycotis*. **82**, xx, 209-12. **Lahille, F.**—Nota sobre un nuevo genero de "Diaspinae". **96**, iv, 595-99. **Parshley, H. M.** Ethological remarks on some New England water striders. **19**, xv, 67-70. **Pennington, M. S.** Nota sobre las especies argentinas del genero *Phymata*. Descripcion de un nuevo hemiptero. Notas sobre las especies argentinas del genero *Nezara*. **96**, iv, 523-30. **de la Torre Bueno, J. R.**—Notes on the Heidemann collection of Heteroptera now at Cornell University. **19**, xv, 70.

**Baker & Moles**,—A n. sp. of Aleyrodidae found on Azalea. **10**, xxii, 81-3. **Davis, W. T.**—North Amer. cicadas belonging to the genera *Platypedia* and *Melampsalta*. **6**, xxviii, 95-135. **Drake, C. J.**—Water striders new to the fauna of Ohio, including the description of a new species. **82**, xx, 205-8. **Ferris, G. F.**—Scale insects of the Santa Cruz peninsula. (Stanford Univ. Pub., Univ. Ser., Biol. Sci., i, 1-57). **Hussey, R. F.**—An American species of *Cymatia* (Corixidae). **19**, xv, 80-3. **Knight, H. H.**—New and little known species of *Phytocoris* from the eastern U. S. **19**, xv, 49-66. **Malloch, J. R.**—A n. sp. of *Typhlocyba* from Illinois. **19**, xv, 48.

**LEPIDOPTERA. Brues, C. T.**—The selection of food plants by insects, with special reference to lepidopterous larvae. **90**, liv, 313-32. **Comstock, J. A.**—Butterflies of California (Bul. So. Cal. Acad. Sci. xix, 48.). **Ehrmann, G. A.**—A n. sp. of Pierinae from Honduras, C. A. **17**, iv, 43. **Lizer, C.**—Nota acerca de la presencia de la "Sitotroga cerealella" en la Republica Argentina. **96**, iv, 530-1. **Prout, L. B.**—New Geometridae. (Some Neotropical) **71**, xxvii, 265-312. **Raymundo, B.**—Noticia sobre algunos lepidopteros serigenos do Brasil. (Ann. Colegio Pedro II, iii, 29-95.) **Saunders, A. A.**—Notes on the life history of *Eurema lisa*. **54**, xxxiii, 35-6. **Schaus, W.**—New species of *L.* in the U. S. National Museum. (Neotropical.) **50**, lvii, 107-52. **Seitz, A.** Die grossschmetterlinge der erde. Fauna Amer. Lief. 102-114. **Simms, H. M.**—Butterflies observed in Dead Horse Canyon, Calif., during 1917 season. (Southwest Sci. Bull., Los Angeles, i, 9-12.). **Strickens, H.**—Collecting in February. **17**, iv, 43-4. **Wolff, G.**—Physikalisch-biologische beobachtungen an schmetterlingsflugeln. **103**, xl, 248-59.

**Busck, A.**—A new tortricid moth from Nova Scotia. **4**, 1920, 125.  
**Comstock, J. A.**—A new sp. or race of *Argynnis* from California. *Melipotis sabina*. (Southwest Sci. Bull., Los Angeles, i, 4-8; 30-2.). **Flint & Malloch**,—The European corn-borer and some similar native insects. **93**, xiii, 287-305. **Heinrich, C.**—On some forest L. with descriptions of new species, larvae and pupae. **50**, lvii, 53-96. **McDunnough, J.**—New species of Lepidoptera. **4**, lii, 161-5.

**DIPTERA.** **Alexander, C. P.**—New or little known crane flies from tropical America. **4**, lii, 141-4. Records and descriptions of Neotropical crane-flies. **6**, xxviii, 1-13. **Chandler, S. C.**—A study of the malarial mosquitoes of southern Illinois. **93**, xiii, 309-28. **Duda, Dr.**—Revision der altweltlichen arten der gattung *Sphaerocera*. **30**, lxiii, 1-39. **Edwards, F. W.**—Dimorphism in the antennae of a male midge. **8**, lvi, 135-6. On the use of the generic name *Ceratopogon* (*Chironomidae*). **11**, v, 127-30. The nomenclature of the parts of the male hypopygium of *Diptera Nematocera*, with special reference to mosquitoes. **98**, xiv, 23-40. **Hine, J. S.**—Descriptions of horse-flies from middle America. I. **82**, xx, 185-92. **Huxley, J. S.**—Intersexes in *Drosophila* and different types of intersexuality. **68**, lii, 59-60. **Lischetti, A. B.**—Algunas observaciones sobre la morfología de los huevos de "*Culex*." Un verme del genero "Planaria" enemigo natural de las larvas del mosquito. **96**, iv, 588-95. **Macfie, J. W. S.**—Heat and *Stegomyia fasciata*: Short exposures to raised temperatures. **98**, xiv, 73-82. **Tavares, J. S.**—Cecidologia Brasileira. **102**, xviii, 82-96. **Zetek, J.**—*Anopheles* larvae in salt water. **68**, lii, 15.

**Alexander, C. P.**—The crane flies [of the Katmai expedition of the National Geographic Society]. **82**, xx, 193-203. **Malloch, J. R.**—Some new N. Am. Sapromyzidae. Some n. sps. of *Lonchaeidae* from America. **4**, lii, 126-32.

**COLEOPTERA.** **Angell, J. W.**—*Dorcus parallelus* var. *costatus*. **19**, xv, 66. **Brethes, J.** Un nuevo genero "*Philoscaptus*" para "*Podalgus bonariensis*". **96**, iv, 602. **Bruch, C.**—Metamorfosis de *Cotinis semiopaca*. Descripcion de un nuevo criptofagio. Un nuevo coleoptero ecitofio. **96**, iv, 393-99; 522-3; 579-82. **Chamberlin, W. J.**—Notes on two little known wood boring beetles. *Chrysobothris sylvania* and *Melasis rufipennis*. (*Buprestidae*). **6**, xxviii, 151-7. **Davis, J. J.**—The green Japanese beetle (*Popilia japonica*). (New Jersey Dept. Agric., Circ. 30). **Doorman, G.**—Die mechanik des sprunges der schnellkafer. **57**, xl, 116-9. **Frers, A. G.**—Metamorfosis de coleopteros argentinos. **96**, iv, 565-73. **Hayes, W. P.**—The life histories of some Kansas *Lachnosterna*. **12**, xiii, 303-18. **Lucas, R.**—Catalogus alphabeticus generum et subgenerum *Coleopterorum orbis terrarum totius*. (Archiv f. Naturges, Berlin, lxxxiv, Abt. A, 1-696.) **Nicolay & Weiss**,—The group *Traches* in North America. Part I. The genera *Pachyschelus* and *Taphrocerus*. **6**, xxviii, 136-50. **Poche, F.**—Ueber den wert von specialzeitschriften.



(Munchener Koleop. Zeit., iv, 344-48, 1914.) **Satterthwait, A. F.**—Notes on the habits of *Calendra pertinax*. **12**, xiii, 280-95. **Sharp, D.**—Studies in Rhynchophora. IX. The sexes of *Conotrachelus brevisetis*. **6**, xxviii, 74-8. **Wickham, H. F.**—An interesting Otiiorhynchide weevil from Vancouver. **4**, lii, 134-5.

**Barber, H. S.**—A new tropical weevil from Florida and Cuba. **10**, xxii, 150-2. **Blatchley, W. S.**—Some new Rhynchophora from eastern North America with additions and corrections of the "Rhynchophora of Northeastern America." **6**, xxviii, 161-78. **Chittenden, F. H.**—A new species of *Phyllotreta*. (Jour. Washington Acad. Sci., x, 389-90.) **Garnett, B. T.**—A new *Aphodius* from British Columbia. **4**, lii, 139-41. **Hopping, R.**—A new sp. of the genus *Pissodes*. **4**, lii, 132-4. **Notman, H.**—Coleoptera collected at Schoharie, N. Y., with descriptions of n. sps. Legs in the Carabidae. Col. collected at Windsor, Broome Co., N. Y., with descriptions and notes. **6**, xxviii, 14-31; 80-9; 178-94. **Van Dyke, E. C.**—Description of n. sps. of *Cerambycidae* from the Pacific Coast of North Amer. with notes concerning others. New name for *Nemosoma punctulata*. **19**, xv, 33-48; 85.

**HYMENOPTERA.** **Bequaert, J.** A new host of *Laboulbenia formicarum*, with remarks on the fungous parasites of ants. **19**, xv, 71-79. **Bruch, C.**—Descripcion de una curiosa *Ponerina* de Cordoba. (*Discsthyrea neotropica*). *Nidos y costumbres de hormigas*. **96**, iv, 400-2; 539-41. **Cockerell, T. D. A.**—Eye-colour in bees. **76**, cv, 518. **Hogben, L. T.**—Studies on synapsis. I.—Oogenesis in the Hymenoptera. (Proc. Royal Soc. London, B, xci, 268-93). **Johnson, W. F.**—Hibernating ichneumon flies. (Irish Nat., Dublin, xxix, 65-6.). **Jordan, H. E.**—Studies on striped muscle structure. VII. The development of the sarcostyle of the wing muscle of the wasp. . . . **75**, xix, 97-123. **Lowe, H. J.**—Bees and the scarlet runner bean. **76**, cv, 742. **Poche, F.**—Unberechtigte namensanderungen unter H. und prinzipielle bemerkungen uber einschlagige nomenklatorische fragen. (Entomol. Mitteil. Berlin, vi, 44-54. **Wheeler & Bailey.**—The feeding habits of pseudomyrmine and other ants. (Trans. Amer. Phil. Soc., xxii, 235-79.).

**Cushman & Rohwer**—The North Amer. ichneumon flies of the tribe *Ecoenitini*. Holarctic tribes of the ichneumon flies of the subfamily *Ichneumoninae* (*Pimplinae*). **50**, lvii, 379-96; 503-23. **Rohwer, S. A.**—Descriptions of 26 n. sps. of North Amer. H. The North Amer. ichneumon flies of the tribes *Labenini*, *Rhyssini*, *Xoridini*, *Odontomerini*, and *Phytodietini*. **50**, lvii, 209-31; 405-74.

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ORTHOPTERA OF NORTHEASTERN AMERICA, WITH ESPECIAL REFERENCE TO THE FAUNAS OF INDIANA AND FLORIDA. By W. S. BLATCHLEY. Indianapolis. The Nature Publishing Company. 784 pp. 246 text figs.—The present work is the first effort which has been made to produce under

one cover a "Manual" of the Orthoptera of any very considerable part of North America. The part of the title "Northeastern America" is unfortunate, as America is made up of several major divisions and South America has, as well, a northeastern section. The words "Eastern North America" certainly should have been used, as the first sentence of the Introduction would indicate.

The manual is intended to treat of the order as found in "the United States east of the Mississippi River and Canada east of the 90th Meridian."

The volume is divided into the following major sections: Introduction, A Descriptive Catalogue of the Orthoptera of the Eastern United States and Eastern Canada, Bibliography, Glossary of Terms used in Text, Index to Synonyms and New Generic Assignments as Recognized in This Work, and General Index.

The Introduction states that the present work "is an outgrowth or expansion of my 'Orthoptera of Indiana' issued in 1903." The manual, as the author calls his study, is said to have been prepared to meet "the needs of the tyro and not those of the specialist in Orthoptera." The major sections of the Introduction discuss the classification followed, which we might add is not in toto that of any previous author, synonymy of species, explanations of the method of bibliographic quotation used in the body of the work, the habits and songs of Orthoptera, acknowledgments for aid received, relationship of the insects of the order to other animals, the general external anatomy of a locust, the enemies of Orthoptera, preventive and remedial measures against destructive locusts, and the collecting and preservation of Orthoptera.

Under "Classification" the author voices disagreement with the enforcement of strict priority and has little sympathy with the rigid interpretation of this fundamental of present day nomenclature. The author's belief in individual exceptions has led him into at least one blind alley, as he uses a family Acrididae, but does not like to use a restricted sub-family name Acridinae, derived from the generic *Acrida*, which must be the basis of the family name. Under "Synonymy of Species" (p. 6) we find a commendable analysis of the several variational factors which have been responsible for much of the synonymy in the order. The section criticizing the efforts of some present-day workers to locate certain of the older, briefly described species is quite out of place, and gives no consideration to earnest efforts which have been made in the way of studying itineraries of collectors, checking probable collecting dates and localities, etc., as well as in securing data from the original material when existent. These names were published, are generally recognizable when topotypic material is available and, under generally accepted codes of nomenclature, they cannot be cancelled until they are proven to be unrecognizable. Lack of the biographic, historical and other correlated information to make such locations excuses no one from making the proper effort when

studying a group, and certainly honest painstaking effort should not be called "guessing," unless the critic has a better interpretation to offer.

The author's attitude toward trinomials is not that taken in most present-day zoological works, and he has been led, by following a dogmatic conception of possible but unproven intergradation, into associating as "varieties" a large number of forms which are considered as distinct species by more than a few workers in the Orthoptera. This has been done, in a number of cases, without the study of sufficient material to gain a personal conception of the constancy or inconstancy of the features which are there denied specific weight. In many of his associations of forms as "varieties" or what not we cannot but feel Prof. Blatchley has acted without proper consideration of the facts known to exist, has permitted a mental bias to govern many of his decisions. His attitude toward geographic races (p. 7) shows a failure to grasp the true inwardness of original constancy as an index to racial recognition.

The section treating of the external anatomy of a locust is relatively full, but contains certain features worthy of note, one as an important correction, as on page 14 it is stated the labial palpi are attached to the "labrum." The slip for labium is, of course, evident to the initiated, but the text figure accompanying might readily convey to the tyro the same impression as the incorrect text. It is unfortunate that certain of the anatomical figures, taken from Luggler, contain reference symbols which are nowhere explained in the text before us, and it would have been more in keeping with the general plan of the anatomical section if the structure of the venation of the hind wings had been considered somewhat in detail, as the venation arrangement is known to be important in the classification of the Acrididae, to say nothing of certain of the other families.

In the "Descriptive Catalogue" we find the arrangement is under the form of suborders, i. e., Dermaptoria, Cursoria, Gressoria and Saltatoria; the first of these equals the Dermaptera of most present authors, the Cursoria comprise the Blattidae or cockroaches, the Gressoria are made up of the Mantidae and Phasmidae, while the Saltatoria are composed of the generally associated saltatorial families, the Acrididae, Tettigoniidae and Gryllidae. Under each family the general method is to give a summarized description of the physical form, special appendages, life history, approximate number of known species and number known from America north of Mexico, while the principal literature is cited and a key to the subfamilies given. Under the subfamilies the treatment consists of physical features, key to genera and other pertinent matter. The generic treatment is similarly made up of a summary of the features and a key to the species where more than a single species is treated. The specific treatment consists of a description, with measurements, a general statement of distribution within and outside of the territory covered, comments on habits, often accompanied by a word sketch of the insect and

its habitat, and occasionally by critical taxonomic information or discussion. In many cases we find much to criticize in the latter, which is, in a number of instances, too controversial for introduction in a work of this character. A book for the tyro is no place for the airing of moot points of relationship and nomenclature, and the average zoologist considers the critical matter accumulated in the composition of such a manual best published in advance in another paper, which action would remove the otherwise inevitable doubt and uncertainty from the mind of the "tyro" to whom the manual is addressed.

The keys are relatively full and the illustrations numerous, although very few are original and many of those taken from other sources are poorly reproduced, in some cases on account of too great a reduction.

In the Blattidae we find *Compsodes cucullatus* (Saussure and Zehntner) recorded from the United States for the first time.

In the summary of the Saltatoria the author gives the impression that all sound made by the insects of the suborder is produced by or with the wings, overlooking the remarkable abdominal and limb sound-producing specialization found in the Old World Pneumorinae and in which the wings have no part. The grouse-locusts are considered a family equivalent in rank to the remainder of the locusts, which are termed the family Acrididae. The author shows a peculiar perversity in many of his conclusions regarding the rank of forms treated, shutting his eyes to certain important structural features, often other than genitalic, which latter types of characters he frequently condemns although drawing upon them freely at other times. In more than one case he has fallen back upon a color feature to use in relegating a form to the limbo of a "variety," and has ignored in his argument a structural feature mentioned in the description preceding it, and which a previous author had utilized. The conclusions reached in the critical discussions of a number of species and races, as *Radinotatum brevipenne*, *Trimerotropis acta*, *Podisma glacialis variegata*, the relationship of certain forms of *Mermiria* and of *Chortophaga* are not sound and not supported by the facts in the cases. The conception formed relative to the position of certain species described as belonging to the genus *Eotettix* and also the conclusions on the relationship of many of the species of *Melanoplus* and certain of those of *Hesperotettix* are open to serious question. The naming of the form of *Erietttix simplex* which lacks supplementary carinae on the pronotum is unfortunate, as it opens to some workers the necessity for naming a number of similar forms in the Amblytropidi as found elsewhere. The author's desire to retain his "*sylvestrus*", one of these forms of *Macneillia* (there called *Pedeticum*), is possibly responsible for this attitude, which is quite out of keeping with his treatment of many other forms.

Under the Tettigoniidae we find many sharply criticizable points, the general conclusion reached in regard to the relationship of *Amblycorypha oblongifolia*, *A. floridana* and *A. floridana carinata* being entirely unsound and not supported by the known and published facts. The nomenclatorial

comments on the forms of *Orchelimum* are in some cases distorted by partial quotations from other authors and do not give a full consideration of all the points involved. Partial and incomplete quotation is a weakness of the author, a method unfair to all concerned. The study of the genus *Ceuthophilus* is one of the best pieces of work in the manual, particularly with the original illustrations. Two new species are described in this genus, one with the specific name of *rehebi*, an atrocious effort to associate the names Rehn and Hebard in one specific name. In the new tettigoniids described we are sorry to see no *single* types indicated, as has been recommended more than once by congresses of zoologists and is now pretty general entomological practice. These new forms are *Conocephalus viridifrons*, *Odontoxiphidium apterum affine* and *Diestrammena japonica* (error for *japonica*). In the case of the latter the recent Old World literature has been ignored.

In his treatment of the Gryllidae the author leaves much to be desired, and shows a lack of appreciation of tarsal characters in his presentation of the genus *Anaxipha*.

Vernacular names are given to most of the species, many newly coined and often mere translations or near translations of the technical specific names. Some new full synonymy has been established, and in some cases in a rather obscure way.

The type work leaves much to be desired as errors are numerous, although the press work, except on certain cuts, is good. Cuts on pages 223, 253 and 560 appear inverted through printer's slips.

Professor Blatchley has given to us a work of considerable usefulness, and one which must be in the hands of any student of our eastern Orthoptera. It contains much original matter and represents a vast amount of labor, while our one regret is that it most signally fails to be the impartial, evenly balanced and personally unbiased exposition of the subject a manual for the "tyro" should be. The entire work was done too hastily, without the proper examination of the larger collections upon which such a work must be grounded, if it is to be more than a summary of the past literature. The author was handicapped by lack of constant access to the material absolutely necessary for the critical type of work into which he unconsciously turned his manual, originally intended for the beginner. Many of the seeming inconsistencies of some previous work would have been apparent to him if the material in the Philadelphia collections alone had been given more than a several days' examination.

J. A. G. R.

## Doings of Societies

### Entomological Section, The Academy of Natural Sciences of Philadelphia

The annual meeting was held December 8, 1919, with Director Philip Laurent presiding and twelve persons present, including Mr. J. J. Davis and Mr. C. H. Hadley, of Riverton, New Jersey.

**Lepidoptera.** Mr. Williams exhibited some species of day-flying moths.

**Diptera.** Mr. E. T. Cresson, Jr., exhibited a small collection of Diptera presented to the Society by Mr. F. M. Jones, of Wilmington, Del., and collected by the donor in western United States and Alaska. Altho the collection contains only 95 specimens, it represents 49 determined, and about 17 undetermined species; ten of these are new to the collection, four of which were described as new to science. Particular attention was called to the excellent condition of the material. Special attention was also called to two of the new species. One belonging to the Leptid genus *Arthropeas* which contains only two other American species, differs from all known species by the entirely black legs and is further characterized by the globose facial swelling. The other species, belonging to the Tabanid genus *Silvius*, is especially interesting in that it differs so materially from the other representative of the genus, *gigantulus*, while having all the appearance of some of the species of *Pangonia*. However, in the structure of the antennae and in the absence of hind tibial spurs, supposedly generic characters, it is certainly typical of *Silvius*. The descriptions of the new species are published in the Proc. A. N. S. P. for 1919.

**Orthoptera.** A series of Orthoptera and Dermaptera was exhibited by Mr. Hebard, showing the largest and smallest species of the various families. It was pointed out that the largest known species of Orthoptera is the walking-stick *Phryganistria grandis* Rehn, the smallest is the cricket *Myrmecophila oregonensis* Bruner. The distribution and habits of the various species exhibited were discussed. Further remarks on the subject were made by Dr. Skinner, Laurent and Rehn.

**Coleoptera.** Mr. J. J. Davis exhibited, in Riker mounts, specimens showing the life history of the Japanese Scarabeid beetle, *Popila japonica*, and its ravages on plants (elm, willow, oak, 5-leaved ivy, fern, Norway maple, apple, grape, sweet cherry and smart-weed), and gave a short but interesting talk on its habits, distribution, destructiveness and the methods being pursued with a view to minimizing its ravages and prevent its spread. He stated that it seemed to be confined to Burlington County, New Jersey, appearing in June and continuing its activities into September. It had first been noticed five years ago, multiplied rapidly and was hard to control; the insect in its adult state skeletonizes the leaves of the plant it attacks and seems to eat everything. He spoke of the efforts being made for its reduction, as plowing the ground at the proper season, hand collecting, insecticides and salting, cutting the roadside growths, a difficult task as there were about 200 miles of road in the infested area.

There was discussion as to methods of capture by Messrs. Hebard, Skinner and Williams.

Mr. C. H. Hadley spoke of the quarantine established against these beetles and stated that they were sun-loving, active insects and did not appear in woods. The infested area is now about 25 square miles.

R. C. WILLIAMS, JR., *Recorder, pro tem.*

Meeting of January 22, 1920. Six members and contributors and one visitor present. Vice-director, R. C. Williams presiding. Mr. A. B. Hiedemann was elected a contributor.

**Lepidoptera.** Mr. Williams exhibited a box of butterflies, being some curious aberrations of *Catopsilia agarithe*, *Zerene caesonia*, *Argynnis halcyone*, *Melitaea nubigena*, *quino*, and *fulvia*, *Plebeius saepiolus*, *Cyaniris argiolus echo*, *Everes comyntas*, *Heodes helloides*, and *hypophlaeas*. He also spoke about collecting in Connecticut, especially of the irregular appearance of some species, stating that he considered it impossible to plot the distribution of species by collecting in a single season.

**Diptera.** Mr. Cresson made some remarks on a new Trypetid injurious to the English walnut in Arizona.

**Orthoptera.** Mr. Rehn exhibited and made some interesting remarks on some Orthoptera of the southwestern portions of the United States. He took some exceptions to Mr. Williams' remarks on collecting, stating that by expert and constant collecting in one season, a good representative collection of the orthopterous species can be secured.

E. T. CRESSON, JR., *Recorder.*

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## Obituary

An obituary notice of WILBUR ROSS McCONNELL, Assistant Professor of Zoology and Entomology at the Pennsylvania State College from 1907 to 1912, and subsequently connected with the Federal Bureau of Entomology, appears in the *Journal of Economic Entomology* for August, 1920. He was born at Whitesburg, Pennsylvania, in 1881, and died at Carlisle in the same state, June 23, 1920, and had paid much attention to the parasites of the Hessian fly.

The Bulletin of the Entomological Society of France (1920, No. 10) announces the death of J. R. SAHLBERG at Helsingfors, Finland, on May 8, 1920, aged 80 years. He published on the Coleoptera and Hemiptera of Finland and on entomological collections, especially of Coleoptera, which he had made in conjunction with his son, U. Sallas, along the eastern and southern Mediterranean. His father and grandfather also were well-known entomologists. Since this note was written, an obituary notice has appeared in *Science* for Sept. 3, 1920, giving his age as 75.

An obituary notice of JOSEPH PANTEL, whose death was mentioned in the NEWS for July last, page 210, is accessible in *Science* for Sept. 17, 1920.

The death of LEONARD DONCASTER,<sup>1</sup> Derby professor of Zoology in the University of Liverpool, on May 28, 1920, was reported in *Science* for July 2. Although chiefly a student of heredity and cytology, as evidenced in his two books *Heredity in the Light of Recent Research* (1910) and *The Determination of Sex* (1914), his research work was largely based on insects. He published on *Gametogenesis and Sex Determination in the Gall-Fly, Neuroterus lenticularis* (3 parts, Proc. Roy. Soc., 1910, 1911, 1916). *On the Relation between Chromosomes, Sex-limited Transmission and Sex-determination in Abraxas grossulariata* and *On the Chromosomes of Biston hirtaria, Nyssia zonaria and their hybrids* (Journ. Genetics 1914), and *On Some Gynandromorphic Specimens of Abraxas grossulariata* (Proc. Cambr. Phil. Soc. 1916). He was born at Sheffield, Dec. 31, 1877, attended the Leighton Park School at Reading, went to Kings College, Cambridge (of which he became a Fellow in 1910), and was Lecturer on Zoology at Birmingham University, 1906-1910. He was elected a Fellow of the Royal Society in 1915.

The Philadelphia *Public Ledger*, of August 30, 1920, published a despatch from "Tokio, Aug. 29. The Rev. HENRY LOOMIS, a pioneer missionary, is dead here. He was born in Burlington, New York, in 1839." We suppose that it was he through whom a number of American entomologists obtained Japanese insects, especially in 1888 and 1889.

#### Additions to the Recorded Illinois Reduviidae (Hem.)

Van Duzee's recent Catalogue of Hemiptera contains all the published records of Reduviidae from Illinois, but there are in the collection of the Illinois State Natural History Survey many species which are not included in that catalogue as occurring in the state. The following list supplies the omitted species. The nomenclature is according to Van Duzee's catalogue.

*Ploiariola errabunda* Say, *P. tuberculata* Banks, *Barce annulipes* Stal, *B. fraterna* Say, *Oncerothelus acuminatus* Say, *Pnirontis infirma* Stal, *Pygolampis sericea* Stal, *Stenopoda culiciformis* Fabricius, *Oncocephalus apiculatus* Reuter, *Narvesus carolinensis* Stal, *Reduvius personatus* Linne, *Melanolestes abdominalis* H.-S., *Sirthena carinata* Fabricius, *Rhiginia cruciata* Say, *Apiomerus crassipes* Fabricius, *Zelus exsanguis* Stal, *Pselliopus barberi* Davis, *Repipta taurus* Fabricius, *Fitchia spinulosa* Stal, *Arilus cristatus* Linne, *Acholla diadema* Fabricius, *Sinea spinipes* H.-S.

This brings the state list to a total of 30 species, three more than recorded from New Jersey in 1909.

J. R. MALLOCH.



## EXCHANGES.

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

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☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

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**Lepidoptera**—Offer many Western species and will collect next month in Colorado desert, S. E. Cal.; will exchange or purchase. Desire rarer Noctuids, fresh, full data. Chas. A. Hill, 644 West 36th St., Los Angeles, Cal.

**Books Wanted**—Entomological News, Vol. 11, Nos. 1, 3, 5; Vol. 14, Nos. 1, 7. Brooklyn Museum Library, Eastern Parkway and Washington Ave., Brooklyn, N. Y.

**Wanted**—N. A. Coleopterists interested in European Coleoptera. Liberal exchanges and friendly correspondence. Mr. C. Crozet, 155, Via Cavour, Rome, 23, Italy.

**Japanese and Formosan Butterflies** will be exchanged by S. Satake, 48, Aoyama-minami-machi, 5-chome Tokyo, Japan.

**Wanted**—To purchase or exchange papers and books on insect Biology, Ecology, and Behavior, especially aquatic Hemiptera.—C. F. Curtis Riley, Department of Forest Zoology, The New York State College of Forestry at Syracuse University, Syracuse, New York.

**Wanted**—North American or European Coleoptera to determine in exchange for specimens.—R. T. Garnett, 625a 14th St., Oakland, Cal.

**Wanted**—Species of Rhynchophora from Eastern North America not represented in my collection, in exchange for duplicates from Indiana and Florida. Lists of desiderata and duplicates on application. W. S. Blatchley, 1530 Park Avenue, Indianapolis, Indiana.

**Omophron** and **Elaphrus** desired, in numbers, including the common species. Good exchange given. H. F. Wickham, Iowa City, Iowa.

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